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ABSTRACT

An attempt was made in 1974 to locate a group of boys originally studied in 1969 when they were ninth graders in the Fort Wayne, Indiana public schools. In 1974, information about high school academic performance was obtained for over 90 percent and educational attainment data were obtained for about 80 percent of the sample. Information obtained in 1969 has been used to explain these two outcomes. Although 49-58 percent of the variance in both academic performance and educational attainment has been explained for both blacks and whites, very different patterns of explanation result for the two races. The socioeconomic status of the boys' families is a powerful source of explanation for whites but not for blacks. In contrast, early nonacademic school experiences and the desire for educational attainment assume much greater explanatory significance for blacks than whites. Overall, the performances and attainments of whites follow more fully an orderly process reflecting familial support and academic continuity while those of blacks are much more discontinuous and influenced by extrafamilial and nonacademic factors during the secondary school years. (Author)

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ANTECEDENTS OF ACADEMIC PERFORMANCE AND EDUCATIONAL ATTAINMENT

by

Alan C. Kerckhoff

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Department of Sociology
Duke University
Durham, North Carolina
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FINAL REPORT

ANTECEDENTS OF ACADEMIC PERFORMANCE AND EDUCATIONAL ATTAINMENT

(Project B-226)

Alan C. Kerckhoff

Duke University

Abstract

An attempt was made in 1974 to locate a group of boys originally studied in 1969 when they were ninth graders in the Fort Wayne, Indiana public schools. In 1974, information about high school academic performance was obtained for over ninety per cent and educational attainment data were obtained for about eighty per cent of the sample. Information obtained in 1969 has been used to explain these two outcomes. Although between 49% and 58% of the variance in both academic performance and educational attainment has been explained for both blacks and whites, very different patterns of explanation result for the two races. The socioeconomic status of the boys' families is a powerful source of explanation for whites but not for blacks. In contrast, early non-academic school experiences and the desire for educational attainment assume much greater explanatory significance for blacks than whites. Overall, the performances and attainments of whites follow more fully an orderly process reflecting familial support and academic continuity while those of blacks are much more discontinuous and influenced by extrafamilial and non-academic factors during the secondary school years.

ANTECEDENTS OF ACADEMIC PERFORMANCE AND EDUCATIONAL ATTAINMENT[1]

In the spring of 1969, detailed questionnaire and school record data were collected from and about all ninth grade boys in five junior high schools in Fort Wayne, Indiana. In addition, interviews were conducted with a sample of the boys' parents. The analysis of those data at that time was oriented toward an understanding of the varying expectations of the future held by these boys. In particular, their educational expectations were investigated. Several findings were especially noteworthy at that time, and they provided the basis for proposing a follow-up study in 1974.

It was particularly striking that the factors which served to explain the educational expectations of the white boys in 1969 were generally much less effective in explaining the expectations of the blacks. Using a multivariate form of analysis, involving measures of ability and level of social origin, it was possible to explain 35% of the variance in educational expectations of the whites, but only 12% of the variance of the blacks. For whites, both ability and social origin contributed significantly to the explanation, but for blacks, only ability was significant. Since it could be shown that the difference was not simply a function of the lower social status of the black families (the analysis for boys from lower status white families was far different from that for the blacks), this seemed to leave two possible explanations. First, there may be less status transmission among blacks, social origin having less to do with attainment than among whites. Second, it may be that the black boys' expectations were far more "unrealistic" than the whites', and thus no set of variables based on effective predictors of actual attainment could be expected to explain them.

Both of these explanations appeared reasonable. A number of other measures of family characteristics had a greater explanatory power for the whites than the blacks, so the explanatory weakness of family social status may simply indicate a general impotence of the black family to influence the outcomes (and thus the expected outcomes) of its children. Certainly this would be in keeping with many of the theoretical (and political) views of the black family. At the same time, there did seem to be a basis for saying that the black boys' expectations were more "unrealistic" than the whites'. Although educational attainment has been shown numerous times to be associated with measured ability, and although the black boys' IQ scores averaged fifteen points lower than those of the whites, there was very little difference in the average level of education expected by the two groups of boys. This alone may be enough to argue that the blacks' expectations were unrealistic and thus they could not be explained with variables that explain actual attainment.

Both explanations, however, are based on assumptions about the associations between antecedent variables (social origin and ability) and actual educational attainment. The first suggests that there is a much weaker association between social origin and educational attainment among blacks than whites. The second assumes that the association between ability and attainment is basically the same for blacks and whites. Without data on actual attainments, it is difficult to assess the merits of the explanations of the outcome in the earlier analysis. One of the reasons for doing the follow-up study, therefore, was to provide a basis for understanding the links between antecedent variables, educational expectations, and educational attainments.

A number of other variables were used in the original study to help explain educational expectations, and some of these proved to be almost as effective in explaining black as white expectations. One of these variables

was the grade average the boy had acquired during the previous two years. This kind of official feedback from the school did seem to provide the boys of both races with a basis for setting their expectations at levels generally in keeping with their previous performances. Another contributor to an explanation of the expectations of boys of both races was a measure of what was called "participation." This was an index constructed from several items having to do with the boys' involvements in the non-academic aspects of the school (athletics and organizations, for instance). A third such variable was a measure of "fatalism," or the faith the boy had in his ability to influence his outcomes. Those (black or white) who were more fatalistic had lower expectations. Finally, it was found that the degree to which parents expressed concern about the boy's grades in school also was associated with his level of expectations -- the more concern they expressed, the higher his expectations.

The association between each of these variables and educational expectations is weaker for blacks than whites, however, and even when they are included in a multivariate explanation of educational expectations, less variance is explained for blacks than whites. This suggests that even though these variables help explain educational expectations of blacks and whites and even though they might also help explain educational attainments of blacks and whites, our ability to explain either expectations or attainments may remain weaker in the case of blacks. Certainly no set of variables used in the original study proved as powerful in explaining black expectations as it did for whites, though these four variables came closest to doing so.

These several previous findings, together with the availability of a wide-ranging set of other earlier measures which could be used to explain attainments, provided the impetus for the present study. Not only was it possible to carry out a true longitudinal analysis using a large number of antecedent

measures to predict attainment, but the earlier analysis had given some basis for concentrating on a particular set of predictors.

Data Collection Procedures

The sample to be followed up in the present study consisted of all those boys for whom 1969 baseline data were available. This was a total of 577 boys, 131 of whom were black and 446 white. Since the boys were in the ninth grade in the spring of 1969, if they had followed a normal sequence of school grades and had stayed in school to graduation, they should have graduated in the spring of 1972. We began our search for their records in the fall of 1973, about sixteen months after they should have graduated.

The Fort Wayne Community Schools had undergone a comprehensive reorganization while these boys were in high school. The major effect of that reorganization, for purposes of this study, was to close one high school and open a new one, thus shifting some of the boys to a new school during their high school years. The extent to which this may have affected attrition rates is not known. One effect it had on the research process, however, was to make it more difficult to find the records of such boys. This extended the time necessary to assemble records, but it did not seem to reduce appreciably the proportion we were able to find.

The actual data collection has been conducted in two phases. In the first phase, extending from late fall 1973 into spring 1974, an attempt was made to find the record folders for all of the boys, either at one of the high schools or in the central storage building of the school system. To the extent possible, the information indicated on the one-page record sheet appended to this report was assembled for each boy. With the exception of the "Activities" section, some information was available on all portions of this form for at least some of the boys. Less than fully adequate information was available in many cases,

however, and the analysis of those data was necessarily limited to the use of grade average, rank in class, and scores on ability and achievement tests. (Requests for such data were sent to other school systems to which boys who had left Fort Wayne had transferred.) Such information was assembled for a total of 530 boys, or 91.9% of the original sample. This includes 414 whites and 116 blacks, or 92.8% of the whites and 88.5% of the blacks in the original sample. Because of varying amounts of missing data, most analyses are based on about 85% of the original sample.

The second phase of the study consisted of attempting to obtain information about the boys since they left school. This phase extended from the spring of 1974 into the fall of that year. Questionnaires were mailed to all boys for whom an adequate address could be found either in the school records or in the Fort Wayne city or telephone directories. (A copy of the questionnaire is appended to this report.) Follow-up postcards were sent to those who failed to return these questionnaires. For those who failed to return the questionnaire after the postcard was sent, an attempt was made to make contact by telephone. If contact was made with either the boy himself or with an immediate relative (parent, sibling, or spouse), some basic attainment information was obtained by telephone interview (a copy is appended), and the importance of returning the questionnaire was stressed. Another copy of the questionnaire was sent if necessary.

Serious difficulties were encountered throughout this second phase. The return of mailed questionnaires was very slow, and the ultimate level of success was quite disappointing. This seemed to be a function of two factors. First, some of the addresses we had were clearly incorrect, and the individuals in question were not even receiving the questionnaire. Second, there seemed to be among these young men a reflection of the general resistance to responding

to inquiries which has been reported by almost all polling and research groups recently. Although we continued to use all possible means to obtain completed questionnaires, this phase of the research would have been of little value if we had not resorted to the use of the telephone interview. Fortunately, it was possible to obtain basic information by telephone in a large proportion of the missing cases. Not only were the men more willing to respond to a few direct oral questions than to filling out a questionnaire, but parents, especially, were willing to provide information about their sons even when the sons failed or refused to do so.

It was possible to collect either telephone information or questionnaire replies (or both) about 451 of the young men, 361 of the whites and 90 of the blacks. Thus, overall, at least educational attainment information is available for 80.9% of the original sample of whites and 68.7% of the original sample of blacks (or 87.2% of those whites and 77.6% of the blacks for whom we have high school performance data).

For 96 of the whites and 12 of the blacks, both telephone interview replies and questionnaire replies were available, so it was possible to compare the reliability of the responses we had gotten from others on the telephone in comparison with the young men's own questionnaire replies. There were some inconsistencies in the information obtained by these two methods, but mainly with respect to marriage and family matters and the details of jobs. Educational attainment, which is the major variable to be considered in this report, was reported in exactly the same way in all but 10 of the cases. None of the differences in the reports was such as to affect appreciably the results to be reported here. In the analysis to be presented, the questionnaire was used as the source of data where it was available, telephone interview data being used only when no other data were available. Of the total samples analyzed in the

educational attainment analysis, the data on 132 of the whites and 71 of the blacks come from telephone interviews, the rest from questionnaires.

The analysis will be presented in two parts. The first is concerned with the use of 1969 data to explain (predict) the academic performance of the boys while in high school. The second part deals with the explanation of educational attainment.[2] Although the majority of that analysis uses 1969 data as the source of explanation, a final step in the analysis includes high school performance as an additional explanatory variable.

Two general principles have been followed throughout the analysis. First, the task has been defined primarily as an exercise in prediction, an attempt to use information collected at the earlier point in time (1969) to explain later outcomes. Thus, only high school performance and educational attainment are used as outcome variables, and none of the 1974 data are used to explain these outcomes, except when academic performance in high school is used as a part of the explanation of educational attainment. Second, a major concern has been to find bases of explanation of the academic performance and educational attainment of the black sample. Given the earlier failure of this and other studies to find bases of explanation of actual or expected attainment that were effective for both blacks and whites, the black sample presented the greater challenge. It also offered the greater opportunity to make a significant contribution in this area of inquiry.

A great deal more analysis was conducted than will be presented here. Only those findings which are both of some magnitude and of possible practical significance will be presented, although some of the less fruitful approaches will be described briefly. The analysis will be presented in the form of multiple regression because of the multivariate approach taken. To simplify the presentation of the data, a matrix of the correlations of all variables to be

used in all of the analyses is presented in Table 1, along with the means and standard deviations of the variables. These statistics are computed using all possible cases. That is, the means and standard deviations are for all cases for which these individual measures are available and the correlations are based on all cases for which each pair of measures is present. Thus, the frequencies vary somewhat, but maximum information is gained from the data. The regression analyses are then based on these "pairwise present" correlations.

Academic Performance

The original study had shown that the academic performance of white students in the Fort Wayne Community Schools was more easily explained than the performance of blacks, but the pattern was not a simple one. In the sixth grade, the grades of black students were as fully explained as those of whites, using family socio-economic status (SES) and the boy's IQ as sources of explanation. In the ninth grade, however, those variables explained the grade average of whites more fully than the average of blacks (R^2 = .441 for whites and .288 for blacks), and the difference was even greater in the twelfth grade (R^2 = .349 for whites and .103 for blacks). There was thus every reason to expect that these same basic explanatory variables would explain the high school academic performance of whites more fully in this follow-up study.

The findings in the present analysis parallel those of the original study, but the black-white difference is not as great as before. The first two rows of each panel of Table 2 present the multiple regression analysis in which grade average during high school is regressed on measures of family SES and the boy's IQ, the independent variables coming from measures available in 1969. Two coefficients are reported at each point, the one in parentheses being the metric coefficient, the other being the standardized or path coefficient. The latter is the significant one to consider if one wishes to assess the relative

sizes of the contributions made by variables used in any given analysis. When one makes comparisons between blacks and whites, however, the path coefficients can be misleading. Since they are standardized on the standard deviation of each group, if the two groups differ in this respect, differences in the standardized coefficients cannot be easily interpreted. Interracial comparisons should thus be based on the metric coefficients.

The basic SES-IQ model is presented in the first row of each panel. This is followed by the same model with mother's education added. In the first row, only IQ makes a significant independent contribution to an explanation of academic performance for either race. In the second row, mother's education also makes a significant contribution for whites and is nearly significant for blacks.[3] The addition of mother's education adds more to the explanation of the variance of academic performance for blacks than whites, the R^2 being increased by .037 and .017, respectively. As a result, the model which includes mother's education as one of the indices of family SES explains black academic performance almost as well as that of the whites. Given the marginal position of the black father, both in the world of work and, often, in the family, it is not surprising that the mother's education adds to the explanation of academic performance of blacks. It is perhaps more noteworthy that it also adds to the explanation for whites. Given the significance of mother's education for both races, the SES-IQ model will include that variable in all further analyses. Overall, IQ is by far the strongest source of explanation of academic performance for both races. The SES measures add only .046 to the explanation for whites beyond that explainable by IQ alone, and .048 for blacks.[4]

The remaining portions of Table 2 report the contributions of each of four other variables to an explanation of academic performance, when they are added to the simple SES-IQ model. Before discussing these results, however, a few

comments are in order concerning some of the analysis that was carried out but not reported here.

As noted in the introduction, several variables had proved useful in the explanation of both black and white educational expectations when the boys were in the ninth grade. One of these was a measure of participation in the school program which consisted of an index combining four measures. These four were: absenteeism, participation in extracurricular activities, being a disciplinary problem, and having a job. This index was also found to be associated with the boys' later academic performance, adding significantly to the SES-IQ model just discussed for both races. Because it was such a crude index, made up of rather disparate items, further analysis was conducted on the individual constituent measures. Of these, the most consistently significant source of explanation of later outcomes was the counsellors' ratings of the boys as being a "severe," "moderate" or "negligible" disciplinary problem. That measure, referred to as a measure of "discipline," is used in the present and later analyses.

Two other measures referred to in the introduction are not included at all in the analyses in this report. These are the measures of fatalism and parental concern. Fatalism did contribute significantly to an explanation of academic performance of the white boys, but not the blacks, when used in a model such as those reported in Table 2.[5] Even for the whites, however, it failed to make a contribution in the more complex models of academic performance (such as those reported in Table 3), and it made no contribution in even the simpler models of educational attainment. It was thus not considered worthwhile to include it in this report. The parental concern measure, based on the boys' reports of their parents' responses to their report cards, failed to make a significant contribution to any of the models, and it is also not included here.

The final four rows in each panel of Table 2 present the analyses using variables which did prove effective in explaining academic performance in high school. Not surprisingly, as shown in the third row of each panel, the most powerful source of explanation was the boy's earlier academic performance. This measure consisted of his grade average in the seventh and eighth grades. As reported in Table 1, the grade averages at these two points in time were correlated .733 for whites and .648 for blacks. Although the earlier grade record is by far the most powerful single predictor of later performance, the other variables add .038 to the R^2 for whites and .084 to the R^2 for blacks beyond the variance explained by early performance alone. For both races, only IQ makes a significant independent contribution to the explanation of high school performance beyond the measure of early performance.[6]

Compared with junior high school grades, none of the other measures considered in this study is a particularly powerful source of explanation of high school performance beyond the basic SES-IQ model. The greatest explanatory gain over the SES-IQ model is provided by the measure of disciplinary difficulty. It makes a significant independent contribution to the explanation of high school performance for both races, increasing the R^2 by .032 for whites and .076 for blacks.

The other two variables introduced into the analysis reported in Table 2 (educational expectations and aspirations) produce effects for whites that are very comparable to those produced by the discipline measure, but they are definitely weaker for blacks. Only the first of these, educational expectations, has been dealt with in any detail in the previous analyses done with the Fort Wayne data, in either the original or the follow-up study. Up to this point, the analysis has been predicated on the assumption that only the first of these was sufficiently "realistic" in its focus to justify its being treated as

meaningful. The two measures differ in the form of the question asked. Educational expectations are the responses to the question (asked when the present subjects were in ninth grade): "How much more schooling do you really expect to get?" Immediately following this came the question: "Often we expect things that are different from what we want to happen. So now, think of what you would do about school if you could do what you <u>really</u> want to do." Following each of these were the same six possible responses ranging from "Quit high school before graduating" to "Go to graduate or professional school after college."

All of the analysis of the original data was conducted with expectations as the dependent variable, mainly because it seemed the more meaningful measure, but also because it related more systematically with other antecedent variables such as SES, IQ, earlier academic performance and so on. It was thus somewhat surprising to notice that the two measures were equally related to high school performance for whites and the difference was not great for blacks (see Table 1). As various portions of the analysis were carried out, it became apparent that the two measures were, indeed, both of interest in explaining outcomes, and that educational aspirations were at least as important as expectations. "Wishes" do seem to make a difference, as the further analysis will show.

In the present portion of the analysis, both expectations and aspirations add significantly and appreciably to an explanation of high school performance for both races, although the increase in R^2 in both cases is greater for blacks. It was also intriguing to note, especially since the two questions clearly asked the boy to compare his wishes with what he expected to happen, that the responses correlated more highly for whites than blacks (.775 versus .628 in Table 1), and that the blacks' wishes exceeded their expectations by more than did the

whites' (compare the means in Table 1). Evidently the two questions generated a greater sense of contrast among the black than the white boys. It was these kinds of observations which led to the further use of these two measures, together and separately, in the analysis of both academic performance and educational attainment.

The data in Table 2 raise at least as many questions as they answer. It is clear that several measures, taken during or before the ninth grade, help explain these boys' high school performance. It is not at all clear, however, whether any combination of these variables explains performance any better than do the models which add single variables to the SES-IQ model. In particular, given the very strong predictive power of junior high grades, it seems unlikely that any of the other variables will increase appreciably the power of the model in row three of the two panels of Table 2.

It is possible to increase the explanatory power of these models, but not very much. In addition to increasing the model's ability to explain high school performance, however, it is equally important to examine the total flow of influence implied by the more complex analysis. Table 3 presents a fully elaborated model which involves three steps. It represents the flow of influence eventuating in varied levels of high school performance in the following way: SES and IQ are seen as influencing both the boy's academic performance in junior high school and the degree to which he behaves in accordance with the school's rules. All of these, in turn, are seen as influencing the boy's educational expectations and aspirations. Finally, all of the previously mentioned factors are viewed as influencing the boy's high school academic performance. (Actually, educational expectations are not used as a variable in the final step of the analysis. The reason for this is discussed later.)

In the first step in the model, as already found in the 1969 study, junior

high grades are explained much more fully for whites than blacks. Only IQ makes a significant contribution to the explanation for blacks, while mother's education also contributes for whites. The explanation of disciplinary problems follows a similar pattern except that (a) much less variance is explained for either race, and (b) IQ makes a much stronger contribution for blacks than whites. Since both grades and the rating as a disciplinary problem are based on others' assessments of the boys' behavior, it is intriguing to speculate about whether mother's education helps explain them because it affects the boys' behavior or because it affects the school personnel's assessments, or both. Unfortunately, the data are not such that we can go beyond speculation, although the racial differences leave open the possibility that the school personnel may be using different criteria for the two races.

The contrast between the races is even more striking in the second step of the model. Neither educational expectations nor aspirations are explained nearly as well for blacks as whites. For whites, although expectations are explained somewhat more fully than aspirations, the same four variables contribute to the explanation of both: IQ, junior high grades, discipline, and father's education. This appears to be a very "rational" outcome. Evidently the white boys use their own observations of past performances (grades and discipline) and a general view of their ability (IQ), as well as using their fathers as role models, as the basis for establishing expectations and wishes for the future. In contrast, none of the antecedent variables helps significantly to explain either aspirations or expectations for blacks. There is thus no real evidence in this analysis that the black boys' view of the future is based on any of the important kinds of evidence available to them. If one scans Table 1, it is apparent that black expectations and aspirations are not correlated with any of the antecedent variables by as much as .30. It is not surprising, therefore,

that some analysts have concluded that these views of the future are more like random responses, just "noise" in the analytic system, and thus not worthy of our attention. The further analysis here makes it clear, however, that that is not a justifiable conclusion.

Even with all the prior variables included in the analysis (in the last row of the Table 3 panels), junior high grades continue to be the most powerful source of explanation of high school grades, and IQ continues to be second. This is true for both races. However, the power of junior high grades is reduced appreciably for blacks over what it was in row 3 of Table 2, and the contribution made by the additional variables is also greater for blacks. In row three of the black panel of Table 2, the path coefficient for junior high grades is .471; in the last row of Table 3 it is only .373. This is a reduction of 20.8%. For whites, the reduction is only 7.5%. At the same time, the R^2 for blacks is .050 higher in Table 3 than in the earlier analysis, while there is practically no increase (only .007) for whites. Thus, the additional variables alter the black model much more than the white, and the overall explanatory power is nearly the same for the two races.

Both discipline and educational aspirations make a nearly significant contribution to the explanation of high school grades for the black boys, while only discipline does so for the whites. When both aspirations and expectations were included in the analysis, neither made even a nearly significant contribution, due to their relatively high intercorrelation. Expectations alone made a slightly weaker contribution than aspirations for both whites and blacks. Thus, somewhat surprisingly, aspirations continue to be at least as important as expectations in explaining later performance, and the contribution is greater for blacks than whites.

Looking back on the overall analysis of academic performance, several

observations are in order. First, the outcomes are much more orderly and understandable in the case of whites than in the case of blacks. Every dependent variable is more fully explained for whites, and in almost all cases the explanation "makes sense" in terms of a rational model of an orderly progression through time. Second, those factors which assume more prominance for blacks than whites tend to be those which contribute to what might be seen as a "disorderly" progression. Even though discipline and views of the future (expectations and aspirations) are only very poorly explained in the analysis, they make a very notable contribution to the explanation of black high school performance. In fact, it is this very "non-rational" nature of black aspirations and expectations (their weak association with the antecedent variables) which makes it possible for them to contribute to an explanation of high school performance.[7] The important point here, however, is that even "non-rational" aspirations and expectations help explain later performances. Third, for both races, non-academic experiences seem to affect high school performance. Discipline is not explained very well for either race, but it makes a nearly significant contribution to the explanation of high school performance for both. Since discipline also does not contribute to an explanation of expectations for either race (though it does help explain aspirations for whites), it may well reflect the kinds of opportunities for performance provided by the school as much as it reflects the boys' motivations to perform. Such non-academic experiences are important sources of explanation of performance, however, whichever the case may be.

Educational Attainment

The young men studied here were in ninth grade in the spring of 1969. Had they stayed in school and made normal progress, they would have graduated in June 1972. We began our efforts to locate them in the spring of 1974 and

continued the search into the fall of that year. They would normally have been out of high school for two years by that time and might have obtained a significant amount of further educational experience. By the time we located them, some had completed two years of college, but others had not gone beyond ninth grade. There was thus a considerable range of educational attainment.

In studies of attainment, it is usual to count only formal education, and most researchers ignore everything but high school and college years completed. The definition of educational attainment used here is more refined than that. We asked the respondents (or their parent or spouse) about educational experience they had had in technical or business schools, in apprenticeships, and in on-the-job training. Granted that these kinds of experiences are difficult to equate with the more formal kinds in any simple linear fashion, they are certainly significant for both occupational and general cultural purposes.

One of the difficulties one encounters when using such information is putting it into a simple linear form which can be used in the kinds of analysis conducted in this study. Given the limited size of the sample, it was not possible to look separately at the group at each educational level; an overall index of attainment had to be used. Several of the men had had these other kinds of educational experience even though they had not graduated from high school. Thus, some way had to be found of combining the formal and less formal educational experiences without giving undue weight to either.

The following scale of educational attainment was devised: 1. Ninth grade. 1.5. Ninth grade plus other educational experience (apprenticeship, technical training, etc.). 2. Tenth grade. 2.5. Tenth grade plus other educational experience. 3. Eleventh grade. 3.5. Eleventh grade plus other educational experience. 4. High school graduate. 5. Graduated and had an apprenticeship

or on-the-job training. 6. Graduated and went to business or technical school. 7. Graduated and went to college one year. 8. Graduated and went to college two years. This scale gives heavier weight to further education obtained in addition to high school graduation than it does to such education without graduation. It also gives much heavier weight to college education than to other post-high school education.

This index of attainment is used throughout the following analysis. The correlations between this measure and all of the other variables used in the analysis are presented in Table 1. Table 4 repeats the kinds of analysis presented in Table 2, this time using educational attainment as the dependent variable.

The first row of each panel of Table 4 reports the findings using the basic SES-IQ model. Compared with the comparable analysis in Table 2 (using academic performance as the dependent variable), two things are particularly noteworthy. First, there is a much greater difference in the amounts of variance explained for the two races here than in Table 2, although the proportion explained is lower for blacks in both cases. The black-white difference is .116 here compared with .049 when academic performance is being explained. More variance for whites and less for blacks is explained here than in Table 2. Second, for whites, SES is much more important and IQ less important in explaining attainment than academic performance; for blacks, there is little difference, IQ being the major source of explanation in both cases. Overall, academic performance is explained similarly for both races, but there is a sizeable racial difference for educational attainment. The analysis of attainment fits the earlier pattern found for expectations -- the contribution of SES is much greater for whites, and only IQ is significant for blacks.

The other four rows in Table 4 report the coefficients in models in each

of which one variable is added to the basic SES-IQ model. The findings are important both in themselves and in comparison with the parallel findings in Table 2. Each of the four additional variables (junior high grades, discipline, expectations and aspirations) makes a sizeable additional contribution to the explanation of attainment, although there are important racial differences. Only aspirations adds to the explanation about the same amount (8%) in both cases. In contrast, junior high grades adds much more for whites than blacks (9.3% versus 5.1%), and discipline adds much more for blacks than whites (9.8% versus 2.6%). Expectations adds less than aspirations for both races, though it is more effective for whites than blacks (6.1% versus 2.9%).

All of these racial differences are greater than those in Table 2. Junior high grades adds far more to an explanation of high school performance for both races than any of the other additional variables do. Junior high grades contributes much less to an explanation of attainment than of performance for both races, and, for blacks, both discipline and aspirations contribute more to the explanation of attainment than junior high grades does. For both races, aspirations is a more powerful additional variable in explaining attainment than in explaining performance, and, for blacks, discipline is more powerful here than in Table 2.

This complex set of findings suggests the following interpretation. Early academic performance is a reasonable basis for the prediction of later performance for both blacks and whites, though ability adds more to that prediction for blacks than for whites. No other variables add a great deal of predictive power, though in each case reviewed the added variable is more powerful for blacks than whites. The prediction of attainment is quite different. Not only is early performance a much weaker predictor, other variables are much more powerful. For whites, the social status of the family is a much more

effective predictor of attainment than it was of performance. For blacks, the disciplinary problems they had in junior high school influence their attainment much more strongly than they influence their academic performance. For whites, a combination of social status, ability and early performance is the best basis of prediction of attainment; for blacks, the best combination is ability and discipline. For boys of both races, however, educational aspirations is a surprisingly powerful predictor of attainment. The further analysis will examine these variables in other combinations.

Table 5 presents the coefficients for various complex models of educational attainment. The first row of each panel adds both junior high grades and discipline to the basic SES-IQ model. For whites, this results in an outcome not very different from that using junior high grades alone (row 2 of Table 4). Although discipline makes a significant independent contribution to the explanation of attainment, it does so at the expense of a sizeable reduction in the effect of junior high grades, thus adding little (less than 1%) to the total explanation. The outcome is quite different for blacks. Adding discipline does decrease the coefficient for junior high grades (well below the significance level), but it also adds appreciably (6.4%) to the total explanation. Clearly, discipline is the stronger of the two predictors for blacks, while junior high grades is stronger for whites.

In the second row of each panel, aspiration is added to the model in row one.[8] It is clear that aspiration is an effective predictor of attainment for both races, but it adds much more for the blacks than the whites. Although the coefficients are very similar for the two races (.328 for whites, .377 for blacks), the R^2 is increased far more for blacks (.063 versus .037).

These results fill out the picture derived from Table 4. When the variables are used in combination, some of the results discussed earlier can be seen

to be redundant. Although SES, IQ, early performance, discipline and expectations are all significant for whites in the models presented in Table 4, in the present model IQ and discipline cease to be significant.[9] One can thus say that SES, early performance and aspiration are the important predictors of attainment for whites. In contrast, for blacks the important predictors are ability, discipline and aspiration. Early performance disappears as a significant source of prediction of attainment.

Before commenting on the overall outcome of this study, one further form of analysis will be presented. Up to this point, all of the analysis has used measures made in 1969 to explain/predict later outcomes, either high school academic performance or educational attainment as of 1974. Since high school performance occurred before the 1974 measure of educational attainment, it is possible to use the former as an additional source of explanation of the latter. Such an analysis brings together the findings in Tables 3 and 5. In Table 3 the SES-IQ measures were used to explain junior high grades and discipline; all of these, in turn, were then used to explain educational expectations and aspirations; finally, all of these (except expectations) were then used to explain high school academic performance. This was a truly longitudinal analysis since the measures of junior high grades and discipline were based on the boys' performances prior to the 1969 measure of aspirations, and high school performance occurred after that. This next analysis can thus be seen as a further step in that same longitudinal analysis, since it uses all of the previous variables in the explanation of educational attainment.

The last row in each panel of Table 5 presents a model in which high school performance is used as an additional source of explanation of attainment. The outcome is strikingly different for the two races. The most dramatic difference is the sharp increase in the R^2 for blacks (.129) compared with a modest increase

for whites (.02_). For the first time in any analysis in this study, the black R^2 is larger than the white. This difference is also reflected in the much larger black regression coefficient for high school performance (.570 versus .214 for whites). Other changes in the regression coefficients are also worth noting. The coefficient for aspirations remains significant for both races, but it is much lower now for blacks than it was in the analysis in the previous row, whereas the white coefficient remains relatively unchanged. It is also true that the black coefficient for IQ is sharply reduced, but it is probably more important to recognize that it is still quite large, almost reaching statistical significance. Similarly, although the white coefficient for junior high performance is sharply reduced, it is impressive that it remains a significant source of explanation of attainment, even with high school grades included in the analysis. Finally, SES remains an important source of explanation for whites and discipline remains an important source for blacks.

Certainly high school grades are important predictors of educational attainment. However, at least for whites, junior high grades are at least as highly correlated with attainment as high school grades are (see Table 1). This fact, together with the fact that junior high grades continue to contribute significantly to the explanation of attainment even when high school grades are included, provides a picture of academic continuity for this group of boys. One can spot the white potential high attainer in the ninth grade, and his high school performance does not add very much to the predictions that could have been made five years earlier. The analysis also suggests, of course, that the attainment of white boys is influenced by more than just their early performance. Both socio-economic status and ambition need to be taken into account.[10]

The situation is very different for blacks. Junior high grades are not very strong sources of explanation of educational attainment. The only analysis

in which they make a significant contribution to the explanation of attainment is the one in which they alone are added to the basic SES-IQ model (row 2 of Table 4). Both discipline and aspirations are more powerful predictors from this early period, and the inclusion of either of these in the analysis "washes out" the significant effect of junior high grades. Equally important, junior high grades are more weakly associated with high school grades for blacks than for whites, and high school grades are more strongly associated with attainment for blacks than for whites (see Table 1). There is thus little continuity of academic performance for blacks, but their high school performance is very important in determining their attainment.

High school grades come closer to explaining educational attainment for blacks than for whites. By themselves, they explain 52.7% of the variance of attainment for blacks, but only 39.6% for whites. Thus, the other variables in the final analysis in Table 5 add only 9.1% to the explanation for blacks, but 19.1% for whites. Besides, different variables contribute to this additional explanation in the two races. Previous academic performance, ambition, and socio-economic status are the important contributors for whites, but ability, discipline and ambition contribute for blacks. The black boys appear to be much more on their own, to depend more for attainment on their own ability and effort, and they seem to need to establish their academic credentials more fully in high school rather than throughout their school experience. The high school years seem to be much more important in and of themselves for blacks, the only important residual effect from the earlier period being the disciplinary problems they may have encountered. White boys who do not perform very well in high school seem to be helped toward high educational attainment by parental economic support and/or carryover effects of their earlier performance. For blacks, the most important carryover effect seems to be a negative one, the reputation as a disciplinary problem.

This analysis has again pointed up the striking differences between the patterns found for the two races. It makes it clear that high school academic performance and educational attainment are the result of different processes in the two races and that performance and attainment are not associated in the same way for blacks and whites. In light of these findings, a general view of attainment, accounting for these differences, is presented in the next section. Although it is necessarily somewhat speculative, it is at least consistent with the findings of this and other related studies.

Summary and Interpretation

Almost any study which finds sharp black-white differences can be interpreted as having found further evidence of racial discrimination. There are those who would be satisfied with that simple conclusion. However, it is an overly simplistic conclusion in the present case. Some of the findings of the present study can certainly be seen as lending support to the idea that blacks do not have the same kinds of opportunities as whites, but there are findings which point in quite different directions, and both will be discussed below. In any event, it will be important to consider carefully more than one possible interpretation of these findings, and it will be necessary to understand the process by which the outcomes described above are reached if any action is to be taken to change the situation. Although what follows will not involve prescriptions for corrective action, such action can succeed only if it is based on a full understanding of the findings. Labelling an outcome as "discriminatory" does not contribute to understanding.

The broad purpose of this study has been to utilize information gathered in the ninth grade to explain later academic performance and educational attainment. Within that framework, the study has been particularly concerned with increasing our understanding of racial differences found in earlier research.

It will be tempting to go back even further in the lives of these boys to speculate about how they got to where we found them in the ninth grade in 1969, but, except to the extent the data are actually from an earlier point (e.g., junior high grades), I will resist that temptation. The comments that follow will be kept within the bounds set by the available data.

One way to assess the "fairness" of the outcomes for blacks and whites is to compare them with the antecedents of these outcomes for the two groups of boys. In a summary fashion, findings reported in Tables 3 and 5 do that, but they are often difficult to interpret. What the data reported there seem to say is that black attainment is not as fully predictable as white attainment. This is especially true if ability and early performance are used as predictors. One might argue that discrimination is reflected in the pattern of relationships among these two measures and attainment. As Table 1 reports, IQ is not as highly associated with junior high grades for blacks as for whites (.504 versus .597), and junior high grades are not as highly associated with attainment for blacks as for whites (.488 versus .656). On the other hand, IQ <u>is</u> as highly associated with attainment for blacks as for whites (.536 versus .525). Also, IQ is almost as highly associated with high school grades for blacks as for whites (.546 versus .591), and high school grades are more highly associated with attainment for blacks than for whites (.726 versus .629). Assuming that IQ scores do represent a measure of ability, it is hard to argue that ability does not lead to attainment for blacks. One can even present statistics to suggest that blacks attain more than whites, given their level of ability. For instance, of those with IQ's less than 100, 62% of the whites but 76% of the blacks graduated from high school. Similarly, of those with IQ's over 100, 46% of the whites but 49% of the blacks obtained some college education. Such statistics can obscure as much as they clarify, of course, since they involve

crude categories rather than the full range of information available. The average attainment level for blacks is impressively high, however, given a fifteen point difference in the average IQ for the two races. The black average in Table 1 is 4.84, compared with 5.38 for whites, on a scale on which 5.00 represents some non-college experience after high school.

Two other patterns in the data presented do suggest at least a serious disadvantage for blacks, if not actual discrimination. I refer to the findings regarding family SES and the boy's disciplinary problems in school. It has been noted that the socio-economic background of the white boy is an important source of explanation of his educational attainment, but this is not the case for blacks. Father's education and family size continue to have a significant effect on educational attainment for whites even when all other explanatory variables are included (Table 5). It is difficult to say with confidence whether this continued effect is due to the family's economic resources which facilitate pursuing further education or due to the kinds of values and encouragement the white boys experience in higher status families, but the racial contrast is very sharp.

There are various ways one might interpret this difference. One could argue, for instance, that black families are all so poor, relative to white families, that the variation in their economic resources is not a significant factor in their sons' educational attainment. Or, similarly, it could be argued that black parents are all so poorly educated that their sons cannot obtain educational guidance or inspiration from them. It is true, of course, that the distributions of most of the SES measures are more truncated for blacks, but that does not appear to explain the different outcomes. For instance, if we restrict our examination of the association between father's and son's levels of educational attainment to those families in which the fathers have a high

school education or less, the same black-white contrast is found as when we look at the total distributions of cases. There is a simple linear relationship between father's and son's education among whites: 29% of white fathers without a high school education have sons who did not graduate from high school compared with only 13% of fathers who are high school graduates; 23% of the former group of sons went beyond high school compared with 47% of the latter group. For blacks, there is no simple relationship: 25% of the sons of fathers without a high school education failed to graduate, but 50% went beyond high school; 9% of the sons of fathers with a high school diploma failed to graduate, but only 36% went beyond high school. Thus, family SES does seem to make a difference for whites but not for blacks, irrespective of the part of the range of SES levels one examines.[11]

Whatever the explanation of the difference, it seems clear that black boys are much more on their own in the process of educational attainment. So far as explaining their attainments is concerned, one can simply ignore the social status of their origins. In fact, their origins do not seem to make a difference for <u>any</u> of the steps in the attainment process as we have examined them. While SES measures contribute to an explanation of the whites' junior high grades as well as their educational expectations and aspirations (Table 3), this is not true for blacks.[12] This is part of what I mean when I say the educational attainment of blacks is less "orderly" than that of whites: there is less inter-generational continuity. Although such lack of continuity may be in keeping with the "best traditions of the United States," the fact that it is found for blacks but not for whites can hardly be viewed in that way.

In contrast to the effects of family status, the boy's disciplinary problems in the school appear to have much more far-reaching effects for blacks than for whites. Of course, the distribution of cases is different for the two

races, blacks being much more frequently defined as severe disciplinary problems in the ninth grade than whites. But, again, that is not the explanation of the greater significance of the association between disciplinary problems and either academic performance or attainment. The simple correlations between discipline and these outcomes are somewhat higher for blacks than for whites (Table 1), but that difference is not as great as the difference in the prominence of discipline as an explanatory variable in the analysis reported above. Its prominence in explaining both performance and attainment for blacks is at least largely a function of the dearth of other explanatory variables. In particular, the weakness of SES variables in the black models leaves the independent effects of discipline more prominent.

But there is evidently more to it than that. It has been found that the educational aspirations the boys reported in ninth grade are significantly associated with both their high school academic performance and their overall educational attainment. This is true for both blacks and whites. However, those aspirations are much more fully explained for whites than for blacks (Table 3). In particular, for whites, discipline makes a strong contribution to the explanation of aspirations, but it makes no contribution for blacks. Evidently, those black boys who were defined as disciplinary problems were not thereby deterred from setting high educational goals. In fact, none of their early school experience seems to have affected the black boys' aspirations very much, since even junior high grades aren't very strongly associated with their aspirations. Yet, these earlier experiences do make a difference in outcomes. Discipline makes more of a difference for blacks than for whites, though the opposite is true for junior high grades.

This is another example of the black-white difference in "orderliness." One cannot explain black aspirations by reference to their earlier school

experiences. Although their earlier experiences do affect the outcomes, they do not seem to realize it, while the white boys do appear to see the connection. Again, one might suppose that the weakness of family effects may be involved here. What may be missing for the black boys is a continuing interpretation of the relevance of present experiences for later outcomes, an interpretation which might normally be expected to come from the family.[13]

One might take heart, however, from the finding that aspirations are a very significant source of explanation of black outcomes, both performance and attainment. If aspirations are viewed as a measure of ambition, it may be reassuring that even boys whose aspirations are "unreasonable" with respect to their background and early performance can obtain goals consistent with those aspirations. It is less than clear, though, that one should interpret the findings in that way. Actually, aspirations are not nearly as strongly associated with outcomes for blacks as for whites (Table 1). It is the fact that they are so weakly associated with any of the <u>other</u> explanatory variables that makes their independent contribution to the explanation of outcomes so strong for blacks. In contrast, white aspirations are part of a whole series of highly intercorrelated antecedent and consequent variables. Aspirations assume such significance in explaining black outcomes because there are so few variables which are even moderately associated with black outcomes.

It is important to acknowledge the role of aspirations for blacks, of course, but the fact remains that those aspirations are not a function of the usual influences found among whites, nor are they as closely associated with outcomes as they are for whites. I have "ransacked" the available data in search of an explanation of black aspirations, with some degree of success. Given the importance of aspirations in the explanation of black attainment, it may be worth looking at the outcome of that effort.

None of the other variables discussed earlier but not included in the analyses thus far adds much to our understanding of black aspirations. Fatalism and mother's and father's concern over academic performance are all only weakly associated with aspirations for blacks, though fatalism contributes significantly to an explanation of white aspirations. However, two other variables, not thus far included in the detailed discussions, do contribute to an understanding of black aspirations. They are the degree to which the boys participated in extracurricular activities in junior high school and the educational expectations of the boys' best friend in the ninth grade.

The activities measure was part of the original participation index (the discipline measure being another part). It consists of the simple summation of the number of athletic teams and other school organizations the boy reported in 1969 that he had taken part in in junior high school. At that same time, each boy was asked for the names of his three best friends in the ninth grade in his school. The first boy named was then identified and some of the information he had supplied us was linked up with those of the boy who identified him as a friend. One item of information about the friend that was linked in this way was his educational expectations.[14] The first of these variables is referred to as "activities," the second as "friend's expectations."

Both of these variables are associated with aspirations more strongly for whites than blacks. (For whites, the correlations with aspirations are .467 and .453 for activities and friend's expectations, respectively; for blacks, the correlations are .448 and .283, respectively.) However, if either of them is included in a model explaining aspirations, it adds more in the case of blacks than whites. For instance, in Table 3, row 4 of each panel, is presented a model using the SES-IQ variables plus junior high grades and discipline to explain aspirations. If discipline is deleted from that analysis, the resulting

R^2 is .343 for whites and .134 for blacks. Adding activities to that model increases the R^2 to .402 for whites and .247 for blacks, an increase of .059 and .113, respectively. Similarly, adding friend's expectations instead of activities increases the R^2 to .365 for whites and .183 for blacks, an increase of .022 and .049, respectively. Finally, the addition of both these variables increases the R^2 to .419 for whites and .291 for blacks, an increase of .076 and .157, respectively.

It is still true, of course, that white aspirations are more fully explained than those of blacks, even when activities and friend's expectations are included in the analysis. But, these two variables increase the explanation much more sharply for blacks than whites, and they bring the R^2 in the black model up to a much higher level than in any other analysis of aspirations we have conducted. Both of these variables add to the impression that black aspirations are affected by different factors than white aspirations and that blacks are generally more influenced by extrafamilial factors.

It is strange, however, that black aspirations are so strongly affected by the kind of school experiences recorded in the activities measure but not at all affected by disciplinary problems. In contrast, white aspirations are affected by both. Also, the inclusion of activities in the black model reduces the regression coefficient for the effect of junior high grades on aspirations to zero, while that coefficient for whites remains strong. Of all the junior high school experience measures we have, therefore, participation in extracurricular activities has by far the strongest effect on black aspirations.[15] Although grades and disciplinary difficulties have the strongest effect on the educational outcomes of black boys, their extracurricular involvement has the strongest effect on their desire to continue in school. And desire, in turn, also has an effect on outcomes.

Conclusions

It has been possible to use measures taken in the ninth grade to explain (predict) a very sizeable proportion of the variance in both high school academic performance and educational attainment. Since the subjects of this research were only about twenty years old at the time, it is not possible to claim that the measure of educational attainment is an index of ultimate attainment, but it seems likely that ultimate educational attainment will be very highly correlated with the measure used here.

Both outcome measures have been predicted to a significant degree for both whites and blacks, but different patterns have been observed for the two races. The relative weakness of family background as a predictor for blacks is the clearest outcome, but that weakness is compensated for by the relative strength of such factors as disciplinary difficulties and aspirations. The black boys seem to have little to base either their aspirations or their attainments on besides their own ability and motivation and the non-academic experiences in school. If they survive high school and do well there, their attainments are as impressive as those of the whites. But doing well seems to depend on early involvement in non-academic activities and staying out of trouble almost as much as it depends on getting good grades. Involvement in school activities affects their desire to go on in school, and staying out of trouble helps them accomplish their goals. Extracurricular activities do not directly influence either high school grades or educational attainment, but they do influence aspirations, and aspirations affect both grades and attainment.

Overall, white boys seem to respond in what is usually viewed as the "rational" way to both their family background and their early academic experiences. They set goals in keeping with both of these, and their later performances and attainments are significantly explainable by reference to them.

Blacks, on the other hand, respond much more to extrafamilial factors (including the expectations of their friends) as well as non-academic school experiences. One cannot understand either their aspirations or their accomplishments unless a broader range of experiences is considered.

The fact that we have been less successful in explaining black aspirations and attainments probably means that we have not tapped the full range of experiences one needs to consider. Undoubtedly there are community factors which need to be taken into account -- the degree of involvement in groups and activities which reduce the significance of the school experiences. Heterosexual as well as friendship relations may also affect the boys' views of school. The black-white differences in the role of disciplinary problems in the explanation of ambition and attainment suggests general cultural differences in the definition of rules, authority figures, and punishments. The view of teachers, counsellors, and other school figures may be sufficiently different that the "same" experience may have very different effects for the black and white boys. This may be true with respect to the kinds of experiences which make school attractive as well as those which make it unattractive, as the different effects of the activities measure suggest.

The present study, like its predecessors, began with an attempt to apply a conceptualization of educational attainment gained from studies of general populations -- which are mostly white. It has had to cope with the general finding that black ambition and attainment cannot be as fully explained in that way. It has been shown, however, that black ambition and attainment are not simply "disorderly," "irrational," or "inexplicable." Considerable progress has been made in explaining the ambition and attainment of both whites and blacks, but very different patterns of explanation are involved for the two races. Using the leads gained from the present analysis, it should be possible to

concentrate more fully in future research on the investigation of those factors which seem to be peculiarly significant in influencing black ambition and attainment. To a considerable extent, these factors seem to lie outside both the family and the school, but, within the school, investigations of non-academic influences should prove particularly fruitful.

FOOTNOTES

1. I am deeply indebted to others for their assistance in this study. Dayton Musselman made it all possible by granting access to the necessary records of the Fort Wayne Community Schools. Hazel Musselman very effectively assembled the school records and handled the difficult tasks of finding these young men and obtaining the telephone interviews. Sharon Poss oversaw the data reduction and conducted the data processing with admirable skill. Richard Campbell contributed valuable ideas and advice throughout the study. Marcia Spray handled both the financial administration and the secretarial work of the project both efficiently and gracefully. My own contributions would have been of little value without theirs.
2. Data on class rank, achievement test performance and 1974 occupation were less complete and they added little to an understanding of outcomes gained from the analysis presented here.
3. This is the first of many cases in which the black coefficients fail to reach statistical significance although their sizes are such that they would have been significant if they had been found with the white sample. The difference in sample sizes is clearly the basis of this outcome. In the present case, for instance, the metric coefficient for mother's education is actually larger for blacks than whites (.199 versus .192) but fails to meet the requirement of being twice the size of its standard error. Coefficients that are twice their standard error are marked with an asterisk (*); those that are between 1.75 and 1.99 times their standard error are marked with a number sign (#).
4. This can be determined by squaring the correlation between IQ and academic performance, as reported in Table 1, and subtracting it from the R^2 reported in Table 2.

5. This finding was reported in the earlier Progress Report.

6. It should be remembered that this IQ measure was made in junior high school. It is thus a legitimate source of prediction of high school performance rather than a simple correlate of it.

7. In this kind of analysis, the weak associations between antecedent variables and intervening variables permits the latter to make an independent statistical contribution to the explanation of high school performance. The failure of expectations and aspirations to contribute to the explanation of high school performance for whites is due in large part to the strong association between these variables and such antecedents as IQ, junior high grades, and father's education. Aspirations and expectations are not as strongly associated with high school performance among blacks as among whites (see Table 1), but they make a stronger <u>independent</u> contribution to an explanation of performance due to their weak association with IQ and junior high grades.

8. As Table 4 suggests, expectation was much less effective in predicting attainment than was aspiration. Thus, only the latter is included in the present analysis. I will return to a discussion of the role of aspiration later in the report.

9. Two of the SES measures (father's occupation and mother's education) also fall below the level of significance in the present analysis. Since I view the four SES measures as multiple indices of the social status of the family, however, I do not wish to make a point of this fact. It is more important, from the perspective used here, to note that two of the SES measures are still significant.

10. Junior high grades alone explain 43.0% of the variance of attainment (the square of the correlation between the two, .656 in Table 1). The other

variables in the analysis presented in row 2 of Table 5 increase this by 13.4%, SES and aspirations being the only other significant contributors.

11. Somewhat different patterns are found when father's occupation or mother's education is examined in this way, but the same general conclusion is appropriate: the association between SES of origin and educational attainment is clearer for whites than blacks.

12. To some extent, this is an overly definitive statement. Some of the black coefficients in the first four rows of Table 3 are rather sizeable, their lack of statistical significance clearly being affected by the small size of the black sample. But even where they are noteworthy (though not significant), they add little to the R^2 for the dependent variable. Also, in the case of the whites, the SES coefficients are large even when other powerful variables are included in the analysis.

13. It may be, then, that what they need is an alternative source of interpretation so that their aspirations and experiences can be more fully integrated. It might be possible for the school to provide that interpretation, although it would not be an easy task.

14. Ideally, for present purposes it would be preferable to have educational aspirations of the friend in the analysis, but to do so would involve a very time-consuming and expensive record linkage process which the project cannot afford. It is unlikely that the outcome would be appreciably different, however.

15. As the pattern of results suggests, discipline and activities are not highly correlated in either race. More puzzling, they are negatively correlated among whites (-.146), as one would expect them to be, but positively correlated (.107) among blacks. White boys who are disciplinary problems have a slight tendency not to be active in extracurriculars, but this is not true for blacks.

Table 1

Correlation Matrices of All Model Variables

Whites

	FaEd	MoEd	Family Size	IQ	Jr. High Grades	Discipline	EdExp	EdAsp	H.S. Grades	EdAtt	Mean	St Dev.
FaOcc	630	483	-221	420	450	-295	452	369	374	488	47.95	24.22
FaEd		558	-132	332	408	-184	442	381	326	472	4.45	2.19
MoEd			-167	333	462	-274	407	348	381	426	3.97	1.97
Family Size				-276	-291	096	-221	-146	-240	-321	3.39	2.11
IQ					597	-320	522	462	591	525	106.96	13.05
Jr. High Grades						-424	548	531	733	656	82.87	6.32
Discipline							-310	-339	-393	-375	1.32	0.60
EdExp								775	471	591	2.95	1.46
EdAsp									471	574	2.98	1.52
High School Grades										629	5.42	2.28
EdAtt											5.38	2.08

Table 1

Correlation Matrices of All Model Variables

Blacks

	FaEd	MoEd	Family Size	IQ	Jr. High Grades	Discipline	EdExp	EdAsp	H.S. Grades	EdAtt	Mean	St. Dev.
FaOcc	259	096	-174	150	129	029	123	148	067	137	24.58	16.19
FaEd		332	-185	-047	-029	188	097	198	-081	040	2.71	1.81
MoEd			-071	112	207	102	192	085	223	197	3.14	1.87
Family Size				-067	-130	-064	-203	-271	-115	-104	5.38	2.80
IQ					504	-368	197	096	546	536	91.60	11.83
Jr. High Grades						-416	260	213	648	488	75.55	4.76
Discipline							-058	-032	-437	-454	1.93	0.88
EdExp								628	351	304	2.41	1.34
EdAsp									281	352	2.66	1.37
High School Grades										726	3.72	1.80
EdAtt											4.84	1.91

NOTE: Decimal points are omitted from all correlations.

Table 2

Basic and Six-Variable Models of High School Academic Performance

	Independent Variables						
	FaOcc	FaEd	Family Size	IQ	MoEd	Other Variables	R^2
Whites	.088 (.008)	.094 (.098)	-.070 (-.075)	*.503 (.088)	--	--	.378
	.061 (.006)	.026 (.027)	-.062 (-.068)	*.484 (.084)	*.166 (.192)	--	.395
	.004 (.000)	-.014 (-.014)	-.002 (-.002)	*.235 (.041)	.042 (.048)	*.577[a] (.208)	.575
	.024 (.002)	.045 (.047)	-.067 (-.072)	*.441 (.077)	*.133 (.155)	*-.193[b] (-.731)	.427
	.041 (.004)	.000 (.000)	-.054 (-.059)	*.427 (.075)	*.146 (.169)	*.158[c] (.246)	.411
	.046 (.004)	-.007 (-.008)	-.063 (-.068)	*.413 (.072)	*.143 (.166)	*.208[d] (.311)	.426

	FaOcc	FaEd	Family Size	IQ	MoEd	Other Variables	R^2
Blacks	-.011 (-.001)	-.070 (-.069)	-.093 (-.060)	*.538 (.082)	--	--	.309
	-.009 (-.001)	-.140 (-.140)	-.093 (-.060)	*.511 (.078)	#.207 (.199)	--	.346
	-.032 (-.004)	-.097 (-.097)	-.031 (-.049)	*.291 (.044)	.125 (.120)	*.471[a] (.178)	.504
	.002 (.000)	-.105 (-.104)	-.109 (-.070)	*.395 (.060)	*.236 (.227)	*-.303[b] (-.613)	.422
	-.021 (-.002)	-.142 (-.142)	-.054 (-.035)	*.474 (.072)	.171 (.164)	*.230[c] (.309)	.394
	-.023 (-.003)	-.175 (-.174)	-.037 (-.024)	*.492 (.075)	*.205 (.197)	*.244[d] (.320)	.400

Note: The additional variables in the last four models are: a. Junior high grades, b. Discipline, c. Educational expectations, d. Educational aspirations. Those coefficients marked by a * are at least twice their standard error; those marked with a # are at least 1.75 times their standard error.

Table 3

Elaborated Model of High School Academic Performance

Whites

Dependent Variables	Independent Variables: FaOcc	FaEd	MoEd	Family Size	IQ	Jr. High Grades	Discipline	EdAsp	R^2
Jr. High Grades	.098 (.025)	.069 (.199)	*.215 (.692)	-.106 (-.317)	*.432 (.209)	--	--	--	.460
Discipline	-.187 (-.005)	.099 (.027)	*-.167 (-.051)	-.022 (-.006)	*-.225 (-.010)	--	--	--	.153
EdExp	.090 (.005)	*.158 (.105)	.065 (.048)	-.028 (-.019)	*.245 (.027)	*.235 (.054)	-.056 (-.136)	--	.417
EdAsp	.020 (.001)	*.153 (.106)	.027 (.021)	.032 (.023)	*.190 (.022)	*.294 (.071)	*-.115 (-.289)	--	.353
H.S. Grades	-.009 (-.001)	-.013 (-.014)	.032 (.038)	-.008 (-.009)	*.217 (.038)	*.534 (.192)	#-.073 (-.275)	.059 (.089)	.582

Blacks

Dependent Variables	Independent Variables: FaOcc	FaEd	MoEd	Family Size	IQ	Jr. High Grades	Discipline	EdAsp	R^2
Jr. High Grades	.050 (.015)	-.091 (-.239)	.174 (.442)	-.094 (-.161)	*.467 (.188)	--	--	--	.292
Discipline	.037 (.002)	.118 (.058)	.099 (.047)	-.054 (-.017)	*-.383 (-.029)	--	--	--	.178
EdExp	.043 (.004)	.022 (.016)	.123 (.088)	-.153 (-.073)	.087 (.010)	.173 (.049)	.019 (.029)	--	.123
EdAsp	.049 (.004)	.159 (.121)	-.027 (-.020)	-.210 (-.103)	-.014 (-.002)	.198 (.057)	.004 (.006)	--	.134
H.S. Grades	-.031 (-.003)	-.110 (-.110)	.158 (.152)	-.027 (-.018)	*.255 (.039)	*.373 (.141)	#-.179 (-.361)	#.177 (.232)	.554

Table 4

Basic and Six-Variable Models of Educational Attainment

	Independent Variables						
	FaOcc	FaEd	Family Size	IQ	MoEd	Other Variables	R^2
Whites	*.143 (.012)	*.189 (.178)	*-.156 (-.154)	*.319 (.051)	*.120 (.126)	--	.427
	#.102 (.009)	*.160 (.151)	*-.113 (-.111)	*.140 (.022)	.031 (.032)	*.414[a] (.136)	.520
	#.110 (.009)	*.206 (.195)	*-.160 (-.158)	*.280 (.045)	.091 (.096)	*-.175[b] (-.601)	.453
	#.104 (.009)	*.136 (.129)	*-.140 (-.138)	*.207 (.033)	.081 (.085)	*.312[c] (.442)	.488
	*.119 (.010)	*.135 (.128)	*-.158 (-.155)	*.205 (.033)	.083 (.088)	*.332[d] (.454)	.506

	FaOcc	FaEd	Family Size	IQ	MoEd	Other Variables	R^2
Blacks	.038 (.005)	-.000 (-.000)	-.054 (-.037)	*.512 (.083)	.132 (.135)	--	.311
	.025 (.003)	.024 (.026)	-.028 (-.019)	*.386 (.062)	.085 (.087)	*.269[a] (.108)	.362
	.051 (.006)	.040 (.043)	-.072 (-.049)	*.380 (.061)	.166 (.170)	*-.345[b] (-.742)	.409
	.029 (.003)	-.002 (-.002)	-.023 (-.016)	*.483 (.078)	.104 (.106)	.180[c] (.258)	.340
	.020 (.002)	-.043 (-.046)	.016 (.010)	*.488 (.079)	.129 (.132)	*.304[a] (.423)	.393

Note: The additional variables in the last four models are: a. Junior high grades, b. Discipline, c. Educational expectations, d. Educational aspirations.

Table 5

Extended Models of Educational Attainment

Whites

FaOcc	FaEd	MoEd	Family Size	IQ	Jr. High Grades	Discipline	EdAsp	H.S. Grades	R^2
.088 (.008)	*.171 (.162)	.021 (.023)	*-.118 (-.116)	*.132 (.021)	*.383 (.126)	*-.095 (-.328)	--	--	.527
.082 (.007)	*.135 (.128)	.015 (.016)	*-.126 (-.124)	.087 (.014)	*.313 (.103)	-.068 (-.234)	*.240 (.328)	--	.564
.085 (.007)	*.138 (.130)	.007 (.008)	*-.124 (-.122)	.036 (.006)	*.187 (.062)	-.051 (-.175)	*.226 (.309)	*.235 (.214)	.587

Blacks

.041 (.005)	.049 (.052)	.132 (.135)	-.054 (-.037)	*.323 (.052)	.164 (.066)	*-.294 (-.664)	--	--	.426
.028 (.003)	.006 (.007)	.140 (.143)	.003 (.002)	*.326 (.053)	.110 (.044)	*-.295 (-.636)	*.271 (.377)	--	.489
.044 (.005)	.066 (.069)	.055 (.056)	.017 (.012)	*.189 (.031)	-.090 (-.036)	*-.200 (-.430)	*.176 (.245)	*.537 (.570)	.618

FORT WAYNE COMMUNITY SCHOOLS FOLLOW-UP

Ident _____

	Name	Street	City	State	Zip	Phone
Student						
Parent						
School						

(7 - 8)

Grade Ave. _____ (9 - 11) Graduated: Mo. _____ Yr. _____ (12) Ranked _____ in a class of _____ or at _____ %-ile (13 - 15)

GRADES

Grade	A	B	C	D	F
9th	/	/	/	/	
10th	/	/	/	/	
11th	/	/	/	/	
12th	/	/	/	/	

(16)

ATTENDANCE

Days Absent	Withdrew	Reason	Re-entered

(17-24) (25 - 28)

ACTIVITIES

Sports	Student Govt.	Organizations	Officer, Captain, etc.

(29 - 34)

Student transferred to _____ (Name) High School in _____ (City) _____ (State) in _____ (Month) _____ (Year)

TEST SCORES

Date	Year in School	Name of Test	Raw Score	Standard Score	Remarks

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

Ident. _____

FOR MEN WHO WERE

IN THE FORT WAYNE SCHOOLS IN 1969

In 1969, you and hundreds of other young men were ninth grade students in the Fort Wayne Community Schools. Since then, all of you have had different kinds of experiences. Some have moved away from Fort Wayne, some have gone into the military service, some have gone to college.

It is important for a school to know what happens to its students so it can help other students plan for the future. The Fort Wayne Community Schools have asked us at Duke University to collect information about former students. We will provide them with information in the form of statistical summaries. All information about individuals will be kept strictly confidential. The only reason we are using identification numbers on the questionnaire is to be sure all those who are sent a questionnaire receive it and return it to us. You need simply fill out the short questionnaire that is attached and send it back in the stamped envelope provided.

Please answer every question you can. Some questions may not apply to you. For example, if you have never had a full-time job, you will not have to answer question #7, which is about your job. Also, some questions have arrows next to them to show that, if you answer in a particular way, you are to go on to another question or questions. For example:

Have you ever lived in Fort Wayne, Indiana?

___ No

___ Yes → Were you born in Fort Wayne? ___ Yes ___ No

Do you still live there? ___ Yes ___ No

The arrow tells you to answer the questions in the box if you ever lived in Fort Wayne. Otherwise, you would just go on to the next question.

Perhaps you would like to have a summary of the information we collect. If so, simply check the box below. If you have moved from the address to which this letter was sent, please write your new address below.

Thank you very much for your help. The information you provide will be of great help to future students.

Alan C. Kerckhoff
Study Director
Duke University

☐ I would like to receive the report of the study when it is ready.

☐ The address used to send this letter was incorrect. My address is:

_____ (street and number) _____ (city and state) _____ (zip code)

1. What is the highest grade you have completed in high school? (CHECK (✓) THE CORRECT ANSWER.)

_____ 9th Grade →
_____ 10th Grade →
_____ 11th Grade →
_____ 12th Grade

Have you passed a test to get a high school diploma?
_____ No
_____ Yes (When? Month _____ Year _____)

2. Have you ever gone to a junior college, four-year college or university? (DO NOT INCLUDE BUSINESS, TECHNICAL, VOCATIONAL OR MILITARY TRAINING.)

_____ No
_____ Yes →

Name of the school(s) _____
How long did you go? _____ 1 year _____ 2 years
_____ 3 years _____ 4 years
What was your major area of study? _____
Did you earn a degree? _____ Yes _____ No
If you have not earned a degree, do you plan to do so?
_____ Yes _____ No
When were you last enrolled in college?
Month _____ Year _____

3. Have you ever gone to a business school or technical institute? (DO NOT INCLUDE APPRENTICESHIP PROGRAMS OR MILITARY SERVICE.)

_____ No
_____ Yes →

What kind of program were you in? (For example, auto mechanic, cooking, printing.) _____
How many weeks did the course last? _____ weeks
Did you finish the course? _____ Yes _____ No
When did you last attend? Month _____ Year _____

4. Were you ever an apprentice or in a formal on-the-job vocational or technical training program? (DO NOT INCLUDE MILITARY TRAINING OR INFORMAL ON-THE-JOB TRAINING.)

_____ No
_____ Yes →

What kind of training did you take? (For example, watch repair, printing, nursing.) _____
How many weeks did the training last? _____ weeks
About how many hours a week were you in class? _____ hours
Did you complete the program? _____ Yes _____ No
When were you last in this program? Month _____ Year _____

5. Have you ever been in the military service?

_____ No

_____ Yes → When did you go into the service? Month _____ Year _____

Are you now on active duty? _____ Yes _____ No

If not, when did you leave military service? Month _____

Year _____

What branch of the service were you in? _____

What special job training did you get in the service? _____

_____

While you were in the service, what were your principal duties?

(For example, cook, mechanic, MP.) _____

_____

6. Have you ever held a full-time civilian job? (DO NOT INCLUDE SUMMER JOBS OR OTHER JOBS HELD DURING SHORT BREAKS IN SCHOOL.)

_____ No (IF YOU HAVE NEVER HAD A FULL-TIME JOB, SKIP TO QUESTION #8.)

_____ Yes → When did you first take a full-time job? Month _____

Year _____

Are you now working full-time? _____ Yes _____ No

7. Please describe your PRESENT or MOST RECENT full-time job. (PLEASE PRINT)

What kind of job is (or was) it? (For example, high school teacher, paint sprayer, stock clerk.) _____

What kind of business or industry is (or was) it in? (For example, county high school, auto assembly plant, insurance company.) _____

_____

What are (or were) your most important duties? (For example, teach 10th grade English, spray primer on auto body, fill supply orders for company departments.) _____

Are (or were) you self-employed in your own business or do (did) you work for someone else? _____ Self-employed or in a partnership

_____ Work for someone else

When did you start to work on this job? Month _____ Year _____

(If you are not currently working, when did you leave your last job?

Month _____ Year _____)

8. Here are five things having to do with jobs. Which of these would you most want in a job? (CHECK ONLY ONE ITEM.)

_____ A. High income

_____ B. No danger of being fired

_____ C. Short working hours

_____ D. Chances of advancement

_____ E. Important work that makes me feel I have accomplished something

Which of them would be second most important? _____ (LETTER FROM THE LIST)

Which would be third most important? _____ (LETTER FROM THE LIST)

Which would be least important to you? _____ (LETTER FROM THE LIST)

9. Here is a list of jobs. For each one, check whether you would be happy or unhappy if you held that job by the time you are thirty years old.

	HAPPY	UNHAPPY
A. Clerk in a store.	_____	_____
B. Carpenter	_____	_____
C. Lawyer.	_____	_____
D. Bookkeeper.	_____	_____
E. Construction laborer.	_____	_____
F. Public school teacher	_____	_____
G. Truck driver.	_____	_____
H. Garage mechanic	_____	_____

10. What kind of job do you think you will have when you are thirty years old? (DESCRIBE IT AS WELL AS YOU CAN ASSUMING THINGS TURN OUT THE WAY YOU EXPECT. PLEASE PRINT.)

_____

11. Is that the kind of job you would like to have when you are thirty, if you could have whatever job you wanted?

_____ Yes

_____ No → What kind of job would you really like to have when you are thirty? (PLEASE PRINT.)

_____

12. How much education do you expect to get over all?

_____ I won't graduate from high school

_____ I'll graduate from high school but I won't go beyond that

_____ I'll go to a business school or a technical school

_____ I'll go to a community college or a junior college for 2 years

_____ I'll graduate from a four-year college

_____ I'll go to a graduate or professional school

13. Is that the amount of education you would like to get if you could do whatever you wanted to do?

_____ Yes

_____ No → How much education would you get if you could do whatever you wanted?

_____ I would graduate from high school

_____ I would go to a business or technical school

_____ I would go to a community college or a junior college for 2 years

_____ I would graduate from a four-year college

_____ I would go to a graduate or professional school

14. Try to think back to when you were in the ninth grade. At that time, how much education did you think you would get over all?

_____ I didn't think I would graduate from high school

_____ I thought I would graduate from high school but I would not do more

_____ I thought I would go to a business or technical school after high school

_____ I thought I would go to a community or junior college for 2 years

_____ I thought I would go to a four-year college

_____ I thought I would go to a graduate or professional school

15. During the last year you were in high school, how many school athletic teams were you on? (Count only teams that played teams from other schools. If you did not go to high school, please skip to question #17.)

Circle the number of teams: 0 1 2 3 4 5 6 or more

16. During the last year you were in high school, how many organizations or school clubs besides athletic teams did you belong to? (For example, student council, science club, the yearbook staff, etc.)

Circle the number of memberships: 0 1 2 3 4 5 6 or more

17. Have you ever been married?

_____ No, and I have no definite plans yet to get married

_____ No, but my girl friend and I plan to get married

_____ Yes →

Are you married now? _____ Yes _____ No _____ Separated

When were you first married? Month _____ Year _____

Do you have children? _____ No _____ Yes (How many?_____)

When was your first child born? Month _____ Year _____

18. Here is a list of statements people have made about what they have done and the way they see things. In each case, circle the reaction that comes closest to your own. If you agree with the statement, circle SA or A, depending on how strongly you feel about it. If you disagree, circle SD or D, depending on how strongly you feel about it.

	Strongly Agree	Agree	Disagree	Strongly Disagree
a) I feel that I am a person of worth, at least on an equal plane with others.	SA	A	D	SD
b) Good luck is more important than hard work for success.	SA	A	D	SD
c) Nowadays, with world conditions the way they are, the wise person lives for today and lets tomorrow take care of itself.	SA	A	D	SD
d) All in all, I am inclined to feel that I am a failure.	SA	A	D	SD
e) All I want out of life in the way of a career is a secure, not too difficult job, with enough pay to afford a nice car and eventually a home of my own . .	SA	A	D	SD
f) Every time I try to get ahead, something or somebody stops me.	SA	A	D	SD
g) I take a positive attitude toward myself.	SA	A	D	SD
h) It doesn't make much difference if the people elect one or another candidate, for nothing will change anyway.	SA	A	D	SD
i) I feel that I have a number of good qualities	SA	A	D	SD
j) When a man is born, the success he is going to have is already in the cards, so he might as well accept it and not fight against it.	SA	A	D	SD

	Strongly Agree	Agree	Disagree	Strongly Disagree
k) On the whole, I am satisfied with myself.	SA	A	D	SD
l) The secret of happiness is not to expect too much out of life, and being content with what comes your way	SA	A	D	SD
m) People like me don't have much chance to be successful in life.	SA	A	D	SD
n) With things as they are today, an intelligent person ought to think about the present, without worrying about what's going to happen tomorrow	SA	A	D	SD
o) I feel I do not have much to be proud of.	SA	A	D	SD

19. Finally, please think back on your school experience as a teenager. What do you remember as being the <u>best</u> part of that experience? What did you like the most?

What do you remember as being the <u>worst</u> part of your school experience? What did you like the least?

Thank you very much for your help. If there are other kinds of information, comments or suggestions you would like to include, we would be happy to get them.

Student Name _____ Respondent _____

BASIC DATA QUESTIONS

1. Highest grade completed in high school? 9___ 10___ 11___ 12___
   If less than 12, ask: Passed a test to get a high school diploma?
   Yes___ No___ If yes, ask: When? Month_____ Year_____

2. Ever gone to a junior college, four-year college or university? (DO NOT INCLUDE BUSINESS, TECHNICAL, VOCATIONAL OR MILITARY TRAINING)
   Yes, once_____ Yes, currently_____ No_____
   If yes, ask: For how long? _____Years. Major area of study?_____
   Earn a degree? Yes___ No___ If no, plan to? Yes___ No___
   When last enrolled? Month_____ Year_____

3. Ever gone to a business school or technical institute? (DO NOT INCLUDE APPRENTICESHIP PROGRAMS OR MILITARY SERVICE). Yes, once_____ Yes, currently_____ No_____
   If yes, ask: How many weeks did the training last? _____weeks.
   How many hours a week were you in class? _____hours.
   Did you finish the course? Yes____ No____.
   When did you last attend? Month_____ Year_____.

4. Ever been an apprentice or in a formal on-the-job vocational or technical training program? (DO NOT INCLUDE MILITARY TRAINING OR INFORMAL ON-THE-JOB TRAINING.)
   Yes, once_____ Yes, currently_____ No_____
   If yes, ask: How many weeks did the training last? _____ weeks.
   How many hours a week were you in class? _____hours.
   Did you complete the program? Yes____ No____.
   When were you last in this program? Month_____ Year_____.

5. Ever been in the military service? Yes, once____ Yes, currently____ No____
   If yes, ask: Branch of service_____.
   When did you go into the service? Month_____ Year_____.
   Are you now on active duty? Yes_____ No_____.
   If no, when did you leave? Month_____ Year_____.

6. Ever held a full-time civilian job? (DO NOT INCLUDE SUMMER JOBS OR OTHER JOBS HELD DURING SHORT BREAKS IN SCHOOL). Yes____ No____ (skip to Question #8).
   If yes, ask: When did you first take a full-time job: Mo._____ Yr._____
   Are you working full-time now? Yes_____ No_____.

7. Please describe your present or most recent full-time job.
   What kind of job is (or was) it? (For example, high school teacher, paint sprayer, stock clerk). _____
   What kind of business or industry is (or was) it in? (For example, county high school, auto assembly plant, insurance company). _____
   Is this: Manufacturing____, wholesale trade____, retail____, other____
   What are (were) your most important duties? (For example, teach 10th grade English, spray primer on auto body, fill supply orders for company departments).
   _____
   Are (were) you self-employed in your own business or do (did) you work for someone else? Self-employed or partnership_____, Work for someone else_____.
   When did you start on this job? Month_____ Year_____.
   If not working now, when did you leave last job? Month_____ Year_____.

8. Marital status: Single_____ Separated or divorced _____ Married_____
   When first married? Month_____ Year_____.
   Children? Number:_____.